

REMARKS

The Office Action of December 17, 2010, has been carefully studied. Claims 1-4, 6, 8-12 and 14-16 appear in this application. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicant respectfully requests favorable reconsideration and formal allowance of the claims.

Response to Examiner Note

The Examiner has noted that the limitations in claim 14 regarding method of making the battery case are not given patentable weight because the Examiner alleges that the patentability of the product does not depend upon its method of manufacture.

It is respectfully submitted that claim 14 defines a patentable product because claim 14 depends from claim 8, based upon the recitation of 5 to 70 weight % of cobalt in the nickel-phosphorus alloy plating layer.

Art Rejections

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Ohmura et al., WO 9903161, English language equivalent US 2003/0077510.

This rejection is respectfully traversed.

Claim 9 has been amended to depend from claim 8, which recites a battery case comprising a nickel-phosphorus alloy plating layer formed on its

inner surface, wherein the nickel-phosphorus alloy plating layer contains 5-70 % by weight cobalt.

Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Hikata, JP 200083466.

This rejection is respectfully traversed.

As noted above, claim 9 now depends from claim 8. There is no disclosure of Hikata of the nickel-phosphorus plating layer containing 5 to 70% by weight of cobalt.

Claims 1, 2, 5, 6, 8, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hikata in view of Soejima et al., JP 54145335.

This rejection is respectfully traversed.

The Examiner concedes that Hikata does not disclose a nickel-phosphorus plating layer contains 5-70% by weight of cobalt.

It is respectfully submitted that Soejima adds nothing to Hikata, because Soejima discloses Ni-Co-P plating in order to raise corrosion resistance (Abstract). According to the examples of Soejima, the corrosion resistance is against corrosion from acid. Hikata, on the other hand, discloses a Ni-P plating for the inner surface of a battery. It is clear that Hikata's plating for the inner surface of a battery, which is needed for resisting corrosion from alkaline solutions (i.e., electrolyte solutions).

One skilled in the art appreciates that corrosion resistance to alkaline and acid solutions varies greatly according to the metals involved. There is neither teaching nor suggestion in Soejima that would lead one skilled in the art to believe Ni-Co-P is resistant to corrosion by alkaline solutions. Therefore, it is respectfully submitted that one skilled in the art, wishing to protect a surface from alkaline corrosion, would not look to a plating layer that protects from acid corrosion. Clearly, one skilled in the art would not substitute the Soejima layer in the Hikata assembly.

Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hikata in view of Soejima and further in view of Ohmura.

This rejection is respectfully traversed.

Claim 1, from which claims 3 and 4 depend, has been amended to recite that the thickness of the nickel plating layer is in the range of 0.5 to 3 microns on a surface supposed to define the inner surface of a case, and in the range of 0.2 to 3 microns on a surface defining the outer surface of a case. Support for this amendment can be found in the specification as filed at paragraph [0010].

The Examples, which begin at page 10 of the specification, describe cases made according to the claimed invention. The comparative examples were made in the same manner as Examples 1-10, but no nickel-phosphorus or nickel-cobalt phosphorus alloy was plated onto the steel sheets. It is clear from Table 1

that the batteries of Examples 1-10, the batteries claimed herein, had a longer discharge time than the batteries of Comparative Examples 1-4.

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmura et al. WO 0213289, English language equivalent US 2004/0005499 in view of Ohmura et al., WO 9903161, English language equivalent US 2003/0077510.

This rejection is respectfully traversed.

Claims 10 and 11 now depend from claim 8, which recites that the nickel-phosphorus plating layer contains 5 to 70% by weight of cobalt. There is no disclosure of any cobalt in the nickel-phosphorus plating layer of either Ohmura reference.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirata in view of soejima as applied above, and further in view of Ohmura'161.

This rejection is respectfully traversed.


Claim 14 depends from claim 8, which includes the limitations of a nickel-cobalt layer containing 5 to 70% phosphorus. As noted above, one skilled in the art would not combine Hikata and Soejima to obtain the herein claimed battery case. Ohmura adds nothing to the combination of Soejima and Hikata, because Ohmura does not disclose the presence of cobalt in a nickel-phosphorus plating layer.

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In view of the above, it is respectfully submitted that the claims are now in condition for allowance, and favorable action thereon is earnestly solicited.

Respectfully submitted,

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